

We claim:

- 1 1. A package for an imager integrated circuit chip, the imager integrated circuit chip having
2 a bond pad for communicating an electrical signal to or from the imager integrated circuit chip,
3 the package comprising:
4 a printed circuit board comprising at least one bond lead and at least one package lead
5 electrically coupled to the bond lead;
6 the imager integrated circuit chip disposed on the printed circuit board;
7 the bond pad coupled to the at least one bond lead, allowing communication of the
8 electrical signal between the at least one package lead and the imager integrated circuit chip; and
9 an optical cover, disposed on the printed circuit board, that, with the printed circuit board,
10 encapsulates the imager integrated circuit chip.
- 2 2. The package of claim 1, wherein the printed circuit board further comprising:
a retaining structure disposed on the printed circuit board around the imager integrated
circuit chip, the retaining structure and the printed circuit board forming a recess in which the
imager integrated circuit chip is mated to the printed circuit board; and
the optical cover comprising a filler material deposited in the recess.
- 3 3. The package of claim 2 wherein the filler material cures within the recess to form a
hardened protective coating over the imager integrated circuit chip.
- 4 4. The package of claim 1 wherein the printed circuit board contains multiple layers of
conducting circuitry.
- 5 5. The package of claim 1 wherein the at least one package lead is arranged on a periphery
of the printed circuit board.
- 6 6. The package of claim 1, wherein the at least one package lead comprises a plurality of
package leads arranged in an array.
- 7 7. The package of claim 1 wherein the printed circuit board comprises a plurality of layers.

1 8. The package of claim 7 wherein the electrical signal is communicated on at least two of
2 the plurality of layers.

1 9. The package of claim 1 wherein the electrical signal is routed to reduce capacitive or
2 inductive interference.

1 10. A chip carrier package for an imager integrated circuit chip, the imager integrated circuit
2 chip having a plurality of electrical pads, the package comprising:

3 a preformed package base comprising:

4 an insulating substrate,

5 a plurality of bond leads disposed on the insulating substrate, and

6 a plurality of package leads electrically coupled to the plurality of bond leads; and
the imager integrated circuit chip disposed on the preformed package base; and
an optical material disposed on the imager integrated circuit chip that cures to form a
hardened protective coating over the imager integrated circuit chip.

11. The chip carrier package of claim 10, further comprising :

a retaining structure surrounding the imager integrated circuit chip, the retaining structure
and the preformed package base forming a recess in which the imager integrated circuit chip is
disposed on the preformed package base; and

the optical material being deposited in the recess before it has cured.

1 12. The chip carrier package of claim 10 wherein the optical material has light transmission
2 characteristics.

1 13. The chip carrier package of claim 10 wherein the preformed package base contains
2 multiple routing layers.

1 14. The chip carrier package of claim 10 wherein at least one of the plurality of package
2 leads is arranged on a periphery of the preformed package base.

1 15. The chip carrier package of claim 10, wherein the preformed package base supports the
2 plurality of package leads in an array.

1 16. The chip carrier package of claim 13 wherein at least one of the plurality of package
2 leads is coupled to at least one of the plurality of bond leads through at least two of the multiple
3 routing layers.

1 17. The chip carrier package of claim 13 wherein at least one of the multiple routing layers
2 comprises a ground-plane.

1 18. An imager component comprising:
2 a printed circuit board comprising a plurality of bond leads and a plurality of package
3 leads;

4 at least one of the plurality of bond leads coupled to at least one of the plurality of
5 package leads;

6 an imager integrated circuit chip coupled to the printed circuit board and to the at least
7 one of the plurality of bond leads; and

8 an optical material deposited on the imager integrated circuit chip and cured to protect the
9 imager integrated circuit chip from an external environment.

10 19. The imager component of claim 18 further comprising a containment structure engaging
11 the printed circuit board, the containment structure and the printed circuit board forming a recess
12 in which the imager integrated circuit chip is disposed on the base insulating substrate.

13 20. The imager component of claim 19 wherein the optical material has a light transmission
14 characteristic.